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10/589,727

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Ulrich Riegel

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MARSHALL, GERSTEIN & BORUN LLP  
233 SOUTH WACKER DRIVE  
6300 SEARS TOWER  
CHICAGO, IL 60606-6357

EXAMINER

GILLESPIE, BENJAMIN

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,727	<b>Applicant(s)</b> RIEGEL ET AL.	
	<b>Examiner</b> BENJAMIN J. GILLESPIE	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 23-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/28/2009 has been entered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Obviousness Rejection I**

3. **Claims 1, 3-15, 23-25, and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al (U.S. Patent 5,797,893) in view of Abuelyaman et al (2001/0020062), Tomalia et al (U.S. Patent 4,507,466), and Wada et al (2004/0048955).

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4. **Regarding claims 1, 3, and 27:** Wada et al ('893) teach a swellable composition comprising:

- a) Absorbent polymer particles
- b) Water-insoluble inorganic powder, and
- c) Polyamine

5. Wherein b) is calcium phosphate, and c) comprises polyalkyleneimine and polyamidoamine, however, there is no teachings that c) is dendritic (Abstract; col 5 lines 33-35; col 10 lines 13-15, 16, and 58; col 11 lines 23, and 31).

6. Abuelyaman et al teach that for polymer systems comprising hydrophobic (water-insoluble) inorganic particles, using dendritic polymer is helpful to prevent agglomeration of said particle when the system is exposed to water. (Abstract; paragraph [0002]). The dendritic polymers consist of polyesters and polyamides, with specific examples being disclosed by Tomalia et al.

7. Tomalia et al teach dendritic polyamidoamine – the same as the polyamine listed by Wada et al ('893) on column 11 lines 31. Therefore, it would have been obvious to modify component c) of Wada et al ('893) into a dendritic polyamine since Abuelyaman et al teach such polymers prevent the agglomeration of hydrophobic particles – i.e. the calcium phosphate of Wada et al ('893) – and Tomalia et al teach how to make dendritic polymers based on polyamidoamine – the same type of polymer listed as being suitable for component c) in Wada et al ('893). Still Wada et al ('893) fail to explicitly teach the final composition as "hydrogel-forming".

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8. Wada et al (2004/0048955) also teach swellable compositions comprising absorbent polymer particles, wherein said composition is useful in the product of diapers. These absorbent polymer particles are hydrogel forming and consist of partially neutralized polyacrylic acid.

Therefore, it would have been obvious to utilize the hydrogel forming polymer particles of Wada et al (2004/0048955) in Wada et al ('893) since they are disclosed as having excellent adsorption properties and are useful in the production of swellable compositions that have the same final application – i.e. diapers.

9. **Regarding claim 4:** Component b) of Wada et al ('893) is calcium phosphate.

10. **Regarding claims 5-6:** The swellable composition further comprises silica powder having a diameter between 10 and 1000 $\mu$ m (Col 10 lines 18-21, 22-25).

11. **Regarding claim 7:** Although silica hollow spheres are not disclosed by Wada et al ('893), it still would have been obvious to use hollow silica microspheres since it would lower the density of absorbent phase, and thereby make the diaper lighter. Also, the thickness of the wall relative to the diameter of the diaper would be expected to control the strength and, inversely, the density. As such, the thickness is a result effective variable. Optimization of result effective variables through routine experimentation is not a patentable distinction. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and MPEP 2144.05 (II) (B).

12. **Regarding claims 8-9:** Column 8 lines 9-14 of Wada et al ('893) teach that component a) has a particle size between 200 $\mu$ m and 600 $\mu$ m - and preferably has "up to 10 weight percent [of] particles having a diameter smaller than 106 $\mu$ m – i.e. the polymer system contains as little as 0 wt% of particles less than 106 $\mu$ m.

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13. **Regarding claims 10-15:** The relied upon component a) of Wada et al (2004/0048955) have a CRC value greater than 27 g/g, and an absorption value under load as high as 40 g/g (Paragraphs [0097]-[0099]).
14. **Regarding claim 23:** Component a) is a partially neutralized polyacrylic acid (Wada et al ('893); col 5 lines 60-62).
15. **Regarding claim 24:** Component a) may be crosslinked with additional crosslinkers (Wada et al ('893); col 6 lines 32-49).
16. **Regarding claim 25:** Component c) is present in an amount of 0.1 to 10 parts by weight based on 100 parts of a) (Wada et al ('893); col 12 lines 25-29).

### **Obviousness Rejection II**

17. **Claims 2 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al ('893) in view of Abuelyaman et al ('062), Tomalia et al ('466), Wada et al ('955), and Hult et al (U.S. Patent 5,418,301).
18. **Regarding claims 2 and 26:** As discussed in paragraphs 4-8 of the instant rejection, the prior art renders obvious a swellable polymer comprising:
- a) Absorbent polymer particles
  - b) Water-insoluble inorganic powder, and
  - c) Dendritic polymer
19. However, Tomalia et al fail to mention dendritic polyester as being suitable for component c).
20. It should be noted that in addition to Tomalia et al - Abuelyaman et al also teach suitable dendritic polymers are disclosed by Hult et al (Abuelyaman et al; paragraph [0041]). Therefore

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looking to the teachings of Hult et al, one of ordinary skill would have found the limitations of claims 2 and 26 obvious since Hult et al teach that suitable dendritic polymers comprise polyester based on dimethylolpropionic acid (Abstract; col 6 lines 55-60).

### **Obviousness Rejection III**

21. **Claims 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al ('893) in view of Abuelyaman et al ('062), Tomalia et al ('466), Wada et al ('955), and Goldman et al (U.S. Patent 5,562,646).

22. **Regarding claims 16 and 17:** As discussed in paragraphs 4-8 of the instant rejection, the prior art renders obvious a swellable polymer comprising:

- a) Absorbent polymer particles
- b) Water-insoluble inorganic powder, and
- c) Dendritic polymer

23. However, the prior art fails to mention the SFC values for component a).

24. Goldman et al also teach absorbent polymer particles useful in the production of diapers. These swellable particles partially neutralized polyacrylic acid that have excellent absorption properties – SFC values as high as 165 (Abstract; Table 2-2). Therefore, it would have been obvious to utilize these absorbent polymer particles in the swellable composition of Wada et al ('893) since they are disclosed as being useful in for the same final application – i.e. diapers.

### ***Response to Arguments***

25. Applicant's arguments with respect to claims 1-17 and 23-27 have been considered but are moot in view of the new ground(s) of rejection. Specifically, the newly applied reference

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Abuclyaman et al (2001/0020062) teaches as to why dendritic polymers are useful in absorbent compositions – see paragraphs 4-8 of the instant rejection.

*Conclusion*

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Benjamin J Gillespie/  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796